

# Vertical Garden Patrick Blanc

Botanist and vertical garden design: Patrick Blanc. Architecture: Mimolimit. Location: Bratislava, Slovakia. Year: 2010.

Do plants really need soil? No, they don't! Soil is nothing more than a mechanical support. Essential are water and an array of dissolved minerals, along with, of course, light and carbon dioxide for photosynthesis. When roots are allowed to penetrate a man-made wall, they easily damage and quicken its destruction. This peril can be avoided if vertical gardens are completely insulated from the existing wall. The green layer becomes the building's second, living, skin. Roots simply spread along the vertical surface of the support structure, leaving the inner wall unaffected; a harmony between plants and architecture is thus achieved.

Plants can be installed on this felt layer as seeds, cuttings or in already grown state. Irrigation is provided from above. If tap water is used, it must be supplemented with a low concentration of nutrients. Of course, the best solution is to recycle water, irrigating with either gray water, effluent from adjacent roofs or condensation from air conditioning. The net weight of the vertical garden, including plants and the metal frame, is less than 30 kilograms per square meter. This makes it possible to be implemented on any wall, without limits as to height or size.

Thanks to its thermal insulation properties, the vertical garden improves efficiency and aids in lowering

energy requirements, both in the winter (by shielding the building from the cold) and in the summer (by providing a natural cooling system). The vertical garden is also an efficient way to filter air. In addition to leaves and their well-known air-improving qualities, roots and the microorganisms associated with them act as a broad-range air cleaning ecosystem. The felt layer captures polluting particles and slowly decomposes and mineralizes them before utilizing them as a plant fertilizer. The vertical garden is thus an efficient tool for air and water remediation for instances when flat surfaces are already extensively used by human activity.

The vertical garden re-creates a living system very similar to natural environments. It is a way to reintroduce nature where it has been forcefully removed. Thanks to botanical knowledge and significant experience, it is now possible to create natural-looking plant landscapes. In any city, anywhere in the world, a bare wall can be transformed into a vertical garden, becoming a valuable shelter for biodiversity.



Number of species: 70. Plants mainly used:  
*Aeschynanthus Caroline*, *Ludisia discolor*.



Previous page: view of wall. This page: detail of wall, reflection of seating area.